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*Admitted only in Maryland
*Admitted only in Virginia
*Practice Limited to
Federal Agencies

September 15, 2003

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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INTERNET ADDRESS:
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SEP 16 2003

Art Unit 1648

TECH CENTER 1600/2900

Re: U.S. Utility Patent Application
Appl. No. 10/050,902; Filed: January 18, 2002
For: **Molecular Antigen Array**
Inventors: Renner *et al.*
Our Ref: 1700.0190004/BJD/SJE

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Fifth Supplemental Information Disclosure Statement;
2. Form PTO-1449 (15 sheets citing 55 documents);
3. 55 documents cited in Form PTO-1449 attached; and
4. One (1) return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

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Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

A handwritten signature in black ink, appearing to read "Brian J. Del Buono", with a long horizontal flourish extending to the right.

Brian J. Del Buono
Attorney for Applicants
Registration No. 42,473

BJD/SJE/lam
Enclosures

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

RENNER *et al.*

Appl. No. 10/050,902

Filed: January 18, 2002

For: **Molecular Antigen Array**

Confirmation No. 7792

Art Unit: 1648

Examiner: Mosher, M.

Atty. Docket: 1700.0190004/BJD/SJE

Fifth Supplemental Information Disclosure Statement

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P.O. Box 1450
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Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. This Fifth Supplemental Information Disclosure Statement is supplemental to Applicants' Fourth Supplemental Information Disclosure Statement (IDS) filed electronically on August 19, 2003. A copy of each document is also provided.

In accordance with 37 C.F.R. § 1.98(a)(3), Applicants' undersigned representative submits the following concise explanation of the relevance of the non-English language document, Document **AP3** cited on Form PTO-1449:

Document **AP3**, WO 94/06472 A1, is in the French language. The relevance of Document **AP3** can be ascertained by reference to the English language abstract appearing therein, and an unverified English language abstract attached as Document **AT94**.

Where the publication date of a listed document does not provide a month of publication, the year of publication of the listed document is sufficiently earlier than the effective U.S. filing date and any foreign priority date so that the month of publication is not in issue. Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

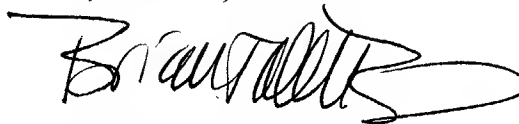
Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered. This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist.

This Fifth Supplemental Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.

Consideration of the cited documents and making the same of record in the prosecution of the above-identified application is respectfully requested. The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Brian J. Del Buono
Attorney for Applicants
Registration No. 42,473

Date: September 15, 2003

1100 New York Avenue, N.W.
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FORM PTO-1449

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INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1700.0190004/BJD/SJEAPPLICATION NO.
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1648

U.S. PATENT DOCUMENTS

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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL						Yes No
	AM						Yes No
	AN3	EP 0 259 149 B1	12/15/1993	Europe			Yes No
	AO3	EP 0 385 610 B1	03/16/1994	Europe			Yes No
	AP3	WO 94/06472 A1	03/31/1994	WIPO			Yes X No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	81	Baba, T.W., et al., "Pathogenicity of Live, Attenuated SIV After Mucosal Infection of Neonatal Macaques," <i>Science</i> 267:1820-1825, American Association for the Advancement of Science (1995)
	AS	81	Bachmann, M.F., et al., "Dendritic cells process exogenous viral proteins and virus-like particles for class I presentation to CD8 ⁺ cytotoxic T lymphocytes," <i>Eur. J. Immunol.</i> 26:2595-2600, VCH Verlagsgesellschaft mbH (1996)
	AT	81	Boorsma, M., et al., "A temperature-regulated replicon-based DNA expression system," <i>Nat. Biotechnol.</i> 18:429-432, Nature America, Inc. (April 2000)

EXAMINER

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL4	EP 0 465 081 B1	04/20/1994	Europe			Yes No
	AM4	EP 0 283 505 B1	07/06/1994	Europe			Yes No
	AN4	WO 94/15585 A1	07/21/1994	WIPO			Yes No
	AO4	EP 0 425 082 A1	04/26/1995	Europe			Yes No
	AP4	WO 96/05293 A1	02/22/1996	WIPO			Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	82	Borisova, G., et al., "Hybrid Hepatitis B Virus Nucleocapsid Bearing an Immunodominant Region from Hepatitis B Virus Surface Antigen," <i>J. Virol.</i> 67:3696-3701, American Society for Microbiology (1993)
	AS	82	Cesareni, G., "Peptide display on filamentous phage capsids: A new powerful tool to study protein-ligand interaction," <i>FEBS Lett.</i> 307:66-70, Elsevier Science Publishers B.V. (1992)
	AT	82	Connor, R.I., et al., "Immunological and Virological Analyses of Persons Infected by Human Immunodeficiency Virus Type 1 while Participating in Trials of Recombinant gp120 Subunit Vaccines," <i>J. Virol.</i> 72:1552-1576, American Society for Microbiology (1998)

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL5	WO 99/07839 A2	02/18/1999	WIPO			Yes No
	AM5	WO 99/40934 A1	08/19/1999	WIPO			Yes No
	AN5	WO 99/67293 A1	12/29/1999	WIPO			Yes No
	AO						Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	83	Crameri, R. and Suter, M., "Display of biologically active proteins on the surface of filamentous phages: a cDNA cloning system for selection of functional gene products linked to the genetic information responsible for their production," <i>Gene</i> 137:69-75, Elsevier Science Publishers B.V. (1993)
	AS	83	Daniel, M.D., et al., "Protective Effects of a Live Attenuated SIV Vaccine with a Deletion in the <i>nef</i> Gene," <i>Science</i> 258:1938-1941, American Association for the Advancement of Science (1992)
	AT	83	de la Cruz, V.F., et al., "Immunogenicity and Epitope Mapping of Foreign Sequences via Genetically Engineered Filamentous Phage," <i>J. Biol. Chem.</i> 263:4318-4322, The American Society for Biochemistry and Molecular Biology, Inc. (1988)

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	AL						Yes No
	AM						Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	<u>84</u>	Donnelly, J.J., et al., "DNA Vaccines," Annu. Rev. Immunol. 15:617-648, Annual Reviews, Inc. (1997)
	AS	<u>84</u>	Ebina, S., et al., "Chemical Modification of Bovine Pancreatic Trypsin Inhibitor for Single Site Coupling of Immunogenic Peptides for NMR Conformational Analysis," J. Biol. Chem. 264:7882-7888, The American Society for Biochemistry and Molecular Biology, Inc. (1989)
	AT	<u>84</u>	Esposito, G., et al., "Conformational study of a short Pertussis toxin T cell epitope incorporated in a multiple antigen peptide template by CD and two-dimensional NMR: Analysis of the structural effects on the activity of synthetic immunogens," Eur. J. Biochem. 217:171-187, Blackwell Science Ltd. on behalf of the Federation of European Biochemical Societies (1993)

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	AL						Yes No
	AM						Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	85	Förster, E., et al., "Natural and recombinant enzymatically active or inactive bee venom phospholipase A ₂ has the same potency to release histamine from basophils in patients with Hymenoptera allergy," <i>J. Allergy Clin. Immunol.</i> 95:1229-1235, Mosby-Year Book, Inc. (1995)
	AS	85	Frolov, I., et al., "Alphavirus-based expression vectors: Strategies and applications," <i>Proc. Natl. Acad. Sci. USA</i> 93:11371-11377, National Academy Press (1996)
	AT	85	Gilbert, S.C., et al., "A protein particle vaccine containing multiple malaria epitopes," <i>Nat. Biotechnol.</i> 15:1280-1284, Nature America Publishing (1997)

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FORM PTO-1449 <u>FIFTH SUPPLEMENTAL</u> <u>INFORMATION DISCLOSURE STATEMENT</u>	ATTY. DOCKET NO. 1700.0190004/BJD/SJE	APPLICATION NO. 10/050,902
	APPLICANT RENNER et al.	
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	AL						Yes No
	AM						Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	86	Greenstone, H.L., et al., "Chimeric paillomavirus virus-like particles elicit antitumor immunity against the E7 oncoprotein in an HPV16 tumor model," <i>Proc. Natl. Acad. Sci. USA</i> 95:1800-1805, National Academy Press (1998)
	AS	86	Hahn, C.S., et al., "Infectious Sindbis virus transient expression vectors for studying antigen processing and presentation," <i>Proc. Natl. Acad. Sci. USA</i> 89:2679-2683, National Academy Press (1992)
	AT	86	Harding, C.V., and Song, R., "Phagocytic Processing of Exogenous Particulate Antigens by Macrophages for Presentation by Class I MHC Molecules," <i>J. Immunol.</i> 153:4925-4933, The American Association of Immunologists (1994)

EXAMINER	DATE CONSIDERED
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FOREIGN PATENT DOCUMENTS

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	AL						Yes No
	AM						Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	<u>87</u>	Hilleman, M.R., "Six decades of vaccine development - a personal history," <i>Nat. Med. Vaccine Suppl.</i> 4:507-514 (May 1998)
	AS	<u>87</u>	Hui, E. K-W. et al., "Hepatitis B viral core proteins with an N-terminal extension can assemble into core-like particles but cannot be enveloped," <i>J. Gen. Virol.</i> 80:2647-2659, Society for General Microbiology (1999)
	AT	<u>87</u>	Iannolo, G., et al., "Construction, Exploitation and Evolution of a New Peptide Library Displayed at High Density by Fusion to the Major Coat Protein of Filamentous Phage," <i>Biol. Chem.</i> 378:517-521, Walter de Gruyter & Co. (1997)

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	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	88	Iannolo, G., et al., "Modifying Filamentous Phage Capsid: Limits in the Size of the Major Capsid Protein," <i>J. Mol. Biol.</i> 248:835-844, Academic Press, Ltd. (1995)
	AS	88	Ikram, H., and Prince, A.M., "A method for coupling the Hepatitis B surface antigen to aldehyde-fixed erythrocytes for use in passive hemagglutination," <i>J. Virol. Methods</i> 2:269-275, Elsevier/North-Holland Biomedical Press (1981)
	AT	88	Kovacsovics-Bankowski, M., et al., "Efficient major histocompatibility complex class I presentation of exogenous antigen upon phagocytosis by macrophages," <i>Proc. Natl. Acad. Sci. USA</i> 90:4942-4946, National Academy Press (1993)

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	89	Lo, K. K-W., et al., "Surface-modified mutants of cytochrome P450cam: enzymatic properties and electrochemistry," <i>FEBS Lett.</i> 451:342-346, Elsevier Science B.V. on behalf of the Federation of European Biochemical Societies (1999)
	AS	89	Minenkova, O.O., et al., "Design of specific immunogens using filamentous phage as the carrier," <i>Gene</i> 128:85-88, Elsevier Science Publishers B.V. (1993)
	AT	89	Neurath, A.R., et al., "Hepatitis B Virus surface antigen (HBsAg) as carrier for synthetic peptides having an attached hydrophobic tail," <i>Mol. Immunol.</i> 26:53-62, Pergamon Press (1989)

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	<u>90</u>	Perham, R.N., et al., "Engineering a peptide epitope display system on filamentous bacteriophage," <i>FEMS Microbiol. Rev.</i> 17:25-31, Elsevier Science Publishers on behalf of the Federation of European Microbiological Societies (1995)
	AS	<u>90</u>	Petrenko, V.A., et al., "A library of organic landscapes on filamentous phage," <i>Protein Engin.</i> 9:797-801, Oxford University Press (1996)
	AT	<u>90</u>	Pumpens, P. and Grens, E., "Hepatitis B core particles as a universal display model: a structure-function basis for development," <i>FEBS Lett.</i> 442:1-6, Elsevier Science B.V. on behalf of the Federation of European Biochemical Societies (1999)

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL						Yes No
	AM						Yes No
	AN						Yes No
	AO						Yes No
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	AR	<u>91</u>	Quash, G., et al., "The preparation of latex particles with covalently bound polyamines IgG and measles agglutinins and their use in visual agglutination tests," <i>J. Immunol. Methods</i> 22:165-174, Elsevier/North-Holland Biomedical Press (1978)
	AS	<u>91</u>	Raychaudhuri, S., and Rock, K.L., "Fully mobilizing host defense: Building better vaccines," <i>Nat. Biotechnol.</i> 16:1025-1031, Nature America, Inc. (1998)
	AT	<u>91</u>	Redfield, R.R., et al., "Disseminated vaccinia in a military recruit with Human Immunodeficiency Virus (HIV) disease," <i>N. Eng. J. Med.</i> 316:673-676, Massachusetts Medical Society (1987)

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1700.0190004/BJD/SJEAPPLICATION NO.
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	AS	<u>92</u>	Sedlik, C., <i>et al.</i> , "Recombinant parvovirus-like particles as an antigen carrier: A novel nonreplicative exogenous antigen to elicit protective antiviral cytotoxic T cells," <i>Proc. Natl. Acad. Sci. USA</i> 94:7503-7508, National Academy Press (1997)
	AT	<u>92</u>	Shen, L., <i>et al.</i> , "Recombinant Virus Vaccine-Induced SIV-Specific CD8 ⁺ Cytotoxic T Lymphocytes," <i>Science</i> 252:440-443, American Association for the Advancement of Science (1991)

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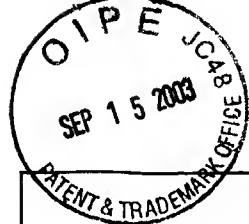
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	AS	<u>93</u>	Townsend, A., and Bodmer, H., "Antigen recognition by class I-restricted T lymphocytes," <i>Ann. Rev. Immunol.</i> 7:601-624, Annual Reviews, Inc. (1989)
	AT	<u>93</u>	VanCott, T.C., et al., "Antibodies with Specificity to Native gp120 and Neutralization Activity against Primary Human Immunodeficiency Virus Type 1 Isolates Elicited by Immunization with Oligomeric gp160," <i>J. Virol.</i> 71:4319-4330, American Society for Microbiology (1997)

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	AS	<u>94</u>	Willis, A.E., et al., "Immunological properties of foreign peptides in multiple display on a filamentous bacteriophage," <i>Gene</i> 128:79-83, Elsevier Science Publishers B.V. (1993)
	AT	<u>94</u>	Dialog File 351, Accession No. 7431992, Derwent WPI English language abstract for WO 94/06472 (Document AP3)

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